

HEALTH CONSULTATION

Review of Final Remedy Decision

TRW, SULLIVAN FACILITY
(a/k/a RAMSEY CORPORATION)
SULLIVAN, FRANKLIN COUNTY, MISSOURI
[EPA FACILITY ID: MOD094390416](#)

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Prepared by:

Missouri Department of Health and Senior Services
Section for Environmental Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

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STATEMENT OF ISSUES AND BACKGROUND

Statement of Issues

The Missouri Department of Health and Senior Services, in cooperation with the Agency for Toxic Substances and Disease Registry, has prepared this [health consultation](#) at the request of the U.S. Environmental Protection Agency to review the health protectiveness of the final remedy chosen for the TRW, Inc. (a.k.a. TRW- Sullivan Facility) Site.

Background

From 1950 until 1983, TRW, Inc. (TRW) operated an automobile piston manufacturing facility at 300 Ramsey Street in Sullivan, Franklin County, Missouri (1). The site encompasses approximately 7 acres (1). A chrome plating system was operated at the facility and various organic solvents and petroleum-based products were used (1). In 1987, the facility was sold to Sullivan Warehousing, Inc. and Sister Property, Inc. (1). Manufacturing operations continue at the facility (1).

On April 1, 1993, TRW and the current owners entered into an Administrative Order on Consent (AOC) with the EPA (1). Since 1983, TRW has performed voluntary investigations and remediation activities at the facility (1). During the corrective action process, four interim measures plans were completed which include the [groundwater](#) monitoring plan, the surface impoundments soils report, the drinking water contingency plan, and the pump and treatment plan (2).

Historically, people were exposed to contaminated soils, [surface water](#) and groundwater at the TRW site. Based upon the data collected during a [Resource Conservation and Recovery Act](#) Facility Investigation (RFI) and associated health-based [risk](#) assessment studies, it was concluded that groundwater was the current primary [exposure pathway](#) for facility-related [contaminants](#) (2). Confirmatory sampling was conducted to assure that soil excavations at contaminant source areas have adequately removed surficial soils and sediment that were above the soil action levels (SALs) at the facility (2). The SALs used at this site were protective of public health. In all cases the action levels were lower than the Missouri Any Use Soil Levels (ASLs) and the ATSDR Environmental Media Guidelines (EMEGs). The deep soil boring installed and sampled during the RFI did not indicate the presence of the contaminants of concern above the SALs (2). Therefore, soils are no longer part of an [exposure](#) pathway of health concern at this site. Surface water and sediment sampling conducted along Winsel Creek, which runs west of the former TRW facility, also did not indicate the presence of the primary contaminants of concern above applicable soil or groundwater regulatory guidance criteria (2). Therefore, surface water and sediments are no longer part of an exposure pathway of health concern at this site.

The RFI confirmed the presence of facility-related contaminants in groundwater above applicable groundwater regulatory guidance criteria and assessed the horizontal and vertical extent of the groundwater contamination caused by releases from the former TRW facility (2). To date, TRW has installed a total of 41 monitoring wells at shallow (150 feet), intermediate (350 feet), and deep (550 feet) levels on and surrounding

the facility property, and has conducted geophysical logging of the subsurface in selected monitoring wells (2). The RFI activities also determined that the primary contaminants of concern (trichloroethylene, 1,2-dichloroethene, 1,2-dichloroethane, lead and chromium) were present above applicable groundwater regulatory guidance criteria at various depths within the aquifer that serves as the water supply for the city of Sullivan (2). At present, there are no known [completed exposure pathways](#) to contaminated drinking water above regulatory standards associated with this site. There are potential future exposure pathways to the contaminated groundwater aquifers, but they are unlikely to occur. The city of Sullivan and TRW both [sample](#) and monitor drinking water supply quality from the city of Sullivan's wells to assure that the water supply meets State Water Quality Standards (2). The city and TRW provide quarterly monitoring reports to federal and state officials (2). In addition, numerous plans are already in place to protect the private and public drinking water supplies to assure that future exposures do not occur. These include deed restrictions, city of Sullivan ordinances, pump and treat systems, and continued monitoring and sampling.

The proposed Groundwater Protection Standards, which are clean-up levels to be set forth in the state-issued consent order (final remedy), are shown in [Table 1](#) (2). The lead and chromium [concentrations](#) shown on [Table 1](#) are total metals concentrations based on unfiltered groundwater samples (2).

Table 1. Groundwater Protection Standards for the TRW Facility (2)

| Chemical Constituent | Maximum Contaminant Level (ppb) | Regulatory Basis |
|--------------------------|---------------------------------|------------------|
| Barium | 2000 | a, b |
| Chromium | 100 | a, b |
| Lead | 15 | a, b |
| 1,2-Dichloroethane | 5 | a, b |
| 1,1-Dichloroethene | 7 | a, b |
| Cis-1,2-Dichloroethene | 70 | a, b |
| Trans-1,2-Dichloroethene | 100 | a, b |
| Trichloroethylene | 5 | a, b |
| Vinyl Chloride | 2 | a, b |

a -Denotes limits obtained from state (10 CSR 60 Chapter 4) and federal public drinking water regulations, November 1997.

b - Denotes limits obtained from Missouri Water Quality Standards (10 CSR 20-7.031) for protection of groundwater, March 1994.

The proposed remedy contains seven components that TRW must carry out (2). These components will be included as a part of the AOC (2). Two of the seven components pertain to protection of public health (2):

- Continuation and revision of the groundwater monitoring plan and drinking water contingency plan that were previously developed under the federally issued consent order. This will include:
 - Detection and delineation of the horizontal and vertical extent of groundwater contamination.
 - Determination and documentation of representative concentrations of contaminants of concern.
- Preparation of a corrective measure work plan that addresses the necessary actions for the effective and efficient implementation of the final remedy. This will include:
 - Identification of the extent of the contamination [plume](#) by installing three or more additional monitoring wells at various depths.
 - Detail of the design, location and installation schedule for an on-site, intermediate-depth recovery well to be incorporated into their ongoing shallow groundwater recovery and treatment system.

- Placement of groundwater use restrictions (deed restrictions) in the property chain-of title prohibiting the installation of wells for domestic or industrial use on the former TRW property.
- Detailing of the design documents for water treatment systems installed, or in the process of being installed, on Municipal Wells No. 2 and No. 8 (both currently closed).

DISCUSSION

Groundwater contamination at depth is currently the primary area of concern at the TRW site. Past corrective actions have removed contamination sources in soils. The final remedy requires a pump and treat system for the intermediate groundwater aquifer. The pump and treat system will be added to the system already in place for shallow groundwater. This will assist in the removal of contaminants from groundwater in these zones. The final remedy calls for continued monitoring of the deep groundwater aquifer that serves the city of Sullivan. Because no completed exposures are known to be occurring, and potential exposures have been addressed and are unlikely, the final remedy is protective of public health.

CHILDREN AND OTHER SENSITIVE POPULATIONS

Upon review of the final remedy, it was determined that children and sensitive populations are not impacted by this site more than any other group of people that may be exposed to contaminants. Therefore, there are no increased risks for adverse health effects to children or sensitive populations at this site. A sensitive population will exhibit a different or enhanced response to hazardous chemicals than will most persons exposed to the same level of hazardous chemicals in the environment. Reasons may include genetic makeup, age, health and nutritional status, and exposure to other toxic substances. In general the elderly, with declining organ function and the young, with immature and developing organs, will be more vulnerable to toxic substances than healthy adults (3).

CONCLUSIONS

Based on available data, and likely exposure scenarios, DHSS has determined that the proposed final remedy for the site is protective of public health and that the site poses no public health hazard. This is based on the following conclusions:

1. There are no current completed exposure pathways to groundwater.
2. The final remedy includes several plans and contingencies to protect public and private drinking water supplies, which will eliminate the potential for completed pathways in the future.

RECOMMENDATION

Proceed with the final remedy at the TRW, Inc., site.

PUBLIC HEALTH ACTION PLAN

This public health action plan (PHAP) for the TRW, Inc. site contains a description of actions to be taken by the Missouri Department of Health and Senior Services (DHSS), the Agency for Toxic Substances and Disease Registry (ATSDR), and others. The purpose of the PHAP is to ensure that this health consultation not only identifies public health hazards, but also provides an action plan to mitigate and prevent adverse human health effects resulting from past, present, and/or future exposures to hazardous substances at or near the site. Included is a commitment from DHSS and/or ATSDR to follow up on this plan to ensure that it is implemented. The public health actions to be implemented by DHSS, ATSDR, and/or cooperators are as follows:

Ongoing Activities

1. DHSS/ATSDR will coordinate with the appropriate environmental agencies to continue to address community health concerns as they arise and provide health education as needed.
2. DHSS/ATSDR will continue to monitor the data from the public water supply from the city of Sullivan.
3. DHSS/ATSDR will continue to work with the appropriate environmental agencies to provide technical assistance as necessary.

Future Activities

1. DHSS/ATSDR will attend future public meetings and availability sessions to meet with community members, address their health concerns and provide health education as needed.
2. DHSS/ATSDR will evaluate any further data that becomes available about human exposures or contaminants at this site.

PREPARERS OF THE REPORT

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REFERENCES

1. O'Brien and Gere Engineers, Inc. Final report, RCRA facility, TRW Inc., Sullivan Missouri. Syracuse, NY: O'Brien and Gere Engineers Inc.;1997, Mar.
2. US Environmental Protection Agency. Final remedy decision. TRW, Inc. Sullivan, Missouri, Washington DC: US Environmental Protection Agency; 2001 Sep.
3. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Trichloroethylene, update. Atlanta: US Department of Health and Human Services; 1997 Sep.

CERTIFICATION

This TRW, Inc. site health consultation was prepared by the Missouri Department of Health and Senior Services (DHSS) under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time this health consultation was initiated.

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